a broken bone is never prevented, although it may be delayed, by constitutional causes. Instances are given of the repair of fractures in cases of recent and long-standing paralysis, and cases of non-union occurring during childhood are incidentally referred to. The results of the treatment of fractures at St. Bartholomew's Hospital during the past seven years are mentioned; also the history of a case of non-uniting fracture of the thigh, and cases of non-union from special local causes. It is concluded that three well-defined varieties must be enumerated of fractures which fail to unite: 1. Fractures, not inaptly termed spontaneous, which ensue from diseases of bone; in which it is evident that no union is likely to take place. 2. Fractures (*a*) with separation of the bone and periosteum to such an extent that there cannot be thrown out bone-material enough to fill up the gap between the fragments; (*b*) occurring through bones not provided with periosteum, when it is difficult to keep the broken ends together. 3. All fractures other than the preceding; and in these cases, although union may be delayed, it never ultimately fails, except as the result of bad management of the injury. Several cases are narrated to show the effect of non-uniting fracture upon joint movements, and the treatment of those injuries where the thigh is the bone involved is briefly referred to. Cases are cited in illustration of the great length of time after the lapse of which a fracture, if properly treated, may be repaired, and the occasional good results from mere fibrous union are illustrated by pathological observations. The question of joint-stiffness after fractures is considered, and the importance of not interfering with such stiffness until the fracture is firmly united is insisted upon, and reasons are given for the presumption that such premature interference by the use of passive movements is a frequent cause of non-union. The following are the conclusions arrived at: Non-union of an ordinary fracture should never occur. Under careful treatment, bones will unite two years or longer after the occurrence of the fracture. It is reasonable to suppose that such fractures would have united at an earlier period, if properly treated. Treatment of delayed union should consist—1st. In the improvement of the health, and in the avoidance of local obstructions to the circulation. 2d. In placing the broken bone in the best position attainable. 3d. In leaving it at rest until it unites, its doing so being simply a question of time. 4th. In avoiding all attempts to overcome the stiffness of joints adjacent to, but not involved in, a fracture, until the bone is firmly united; and this applies also to the management of fractures which unite in the usual time.—*Med. Times and Gaz.*, April 11, 1868.

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35. *Dislocation of the Thigh into the Ischiatic Notch; Reduction by Manipulation.*—Mr. G. W. CALLENDER records (*Lancet*, March 14, 1868) a case of this in a robust labourer, æt. 35. A surgeon in the neighbourhood attempted to reduce the dislocation without success, and the next morning he was sent to St. Bartholomew's Hospital. In the afternoon the patient was put under the influence of chloroform, and Mr. C. attempted reduction but failed; and the following day another effort was made by manipulation, and also by extension by pulleys without success. Vexed by his failures, Mr. C. studied more carefully the causes of his failures, and after allowing the patient to rest for several days he adopted the following plan: "The thigh was bent upon the abdomen, and I slowly moved the limb into a straight line with the body, so that the head of the bone could be felt projecting in the buttock, outside the tuber ischii. The limb, in a straight line with the trunk, without allowing any rotation outwards, was then drawn forward from the abdomen, and forced downwards (extended), and the head of the bone at once slipped into the acetabulum. These movements were made slowly and steadily, and the limb was extended with care, remembering the great leverage which we were making use of, and the position of the head, which was being pressed up into the socket. In two recorded cases the neck of the femur has been broken under a somewhat similar strain.

"If these manœuvres are examined by the help of the skeleton, it will be found that by flexion, and by moving the thigh into a straight line with the body, the head is brought from the notch into the groove just above the outer side of the tuber ischii. Here it is opposite the least prominent part of the lower edge of the acetabulum, and if the femur is depressed whilst in this position the head easily slips into the socket. Dr. Markoe,[1] with the addition of a rocking movement as the thigh is extended, and Dr. Hamilton, employ somewhat similar manœuvres, and they speak favourably of their success.

"I have been anxious to give some explanation of the manner in which the method by manipulation acts, and to insist upon the importance of not abducting or rolling the limb outwards, for if this is done, the head of the bone is almost certain to roll past the acetabulum to its inner side; or if an obturator dislocation is under treatment, and the thigh is rotated inwards, the head of the femur will, as I have several times seen it, roll round on to the ischiatic notch, just reversing the movement which takes place when an ischiatic dislocation is improperly manipulated.

"Three steps complete the operation. First, the thigh is bent on the abdomen; secondly, it is brought into a straight line with the long axis of the body; thirdly, it is forced down (or extended) in a straight line, parallel with its fellow. The dislocation is thus reduced without difficulty and without the need of any assistant. And, what is of chief importance, the operation avoids all risk of rolling the head of the bone round the acetabulum, an accident which is so apt to complicate manipulation as commonly practised."

36. *Dislocation of Tendons.*—M. JARJAVAY observes that, while it is obvious that in severe injuries of joints the displacement of tendons forms but one of the details of the general lesion, the question of whether these admit of displacement without coexisting fracture of the bones or dislocation of the joints is not so easily determined; most authors, however, answering it in the negative. A portion of the subject he has had opportunities of studying, and now presents the results.

1. *Displacement of the Long Tendon of the Biceps.*—After a critical examination of the supposed examples of this occurrence which have been published, and relating five analogous cases which have come under his own notice, he arrives at the following conclusions: 1. The simple dislocation of the long tendon of the biceps has no existence, or at all events this has never been demonstrated. 2. That the lesion which has been mistaken for it is situated in the sub-acromial serous bursa. 3. This lesion consists in inflammatory swelling, caused by the contusion or rupture of the bursa; or, as a consequence of the inflammation, in hypertrophy with induration of its parietes, and a fibrous transformation of the cellular lamellæ which traverse it. 4. The following are the symptoms observed: A sensation of displacement at the time of the accident; tumefaction of the point of the shoulder; pain which prevents the movements of the arm, especially abduction; flexure of the forearm on the arm, with consequent rigidity of the biceps, and a sense of fatigue at the bend of the elbow; increase of pain, and a noise beneath the acromion when the limb is raised in a state of abduction—that is when the tuberosity of the humerus is caused to slide beneath this apophysis (this noise, a kind of cracking, gives the idea of the reduction of something displaced, and is reproduced every time the bone is rotated while held in a horizontal position); a disappearance of the pain, and return of the movements of the part after rest, placing the forearm in a sling, and the application of resolvent lotions to the shoulder, the noise persisting even after the pain has disappeared and the movements of the part have again returned. 5. The application of electricity to the attachments of the deltoid and supra-spinatus muscles is an excellent means of immobilizing the scapula, while the arm is at the same time exercised.

2. *Dislocation of the Tendons of the Peronei Muscles.*—Of the reality of this lesion M. Jarjavay has no doubt, not only on account of cases which have been recorded by others, but also because of two well marked examples he has met with himself, the particulars of which he gives. Still it is a very rare accident, for he cannot agree with M. Demarquay that so obvious a lesion could have been often overlooked by competent surgeons. In two of the recorded cases the tendons of both the peronei were displaced, but in the others only that of one, which M. Jarjavay believes must have always been that of the longus. In

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[1] New York Journal of Medicine, 1855.